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EC
5/20/04

SPRING BEAM SUSPENSION WITH COMPRESSED AXLE MOUNTING

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of International Patent Application No. PCT/US01/01689, filed January 18, 2001, which claims the benefit of U.S. Provisional patent application No. 60/177,023, filed January 19, 2000.

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BACKGROUND OF THE INVENTION

Field of the Invention

[0002] The invention relates to a trailing arm suspension. In one of its aspects, the invention relates to a trailing arm suspension having a spring beam that mounts an axle without welding of the axle. In another of its aspects, the invention relates to a lower weight trailing arm suspension for use with trailer tandem axles. In another of its aspects, the invention relates to a trailing arm suspension with improved roll stability.

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Description of the Related Art

[0003] Trailing arm suspensions are well known and commonly used in heavy-duty applications such as a tractor-trailer configuration. The trailing arm suspension typically comprises a pair of spaced trailing arm assemblies mounted to opposite sides of the vehicle, with each trailing arm assembly carrying an axle supporting the vehicle wheels.

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[0004] The trailing arm assembly comprises a trailing arm having one portion pivotally mounted to a hanger bracket that depends from a vehicle frame rail. An air spring is disposed between another portion of the trailing arm and the vehicle frame rail to dampen the rotation of the trailing arm relative to the vehicle frame.

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[0005] An important function of the trailing arm suspension is compliance in response to vehicle roll-induced forces. The vehicle roll-induced forces are typically created during the turning of the vehicle. As the vehicle is turned, the vehicle tends to rotate about its longitudinal axis in response to the G-forces encountered during the turn, causing one side of the vehicle to drop and another side of the vehicle to rise. This relative movement results in a corresponding relative rotational movement between the trailing arms on opposite sides of the vehicle. The suspension must be sufficiently

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